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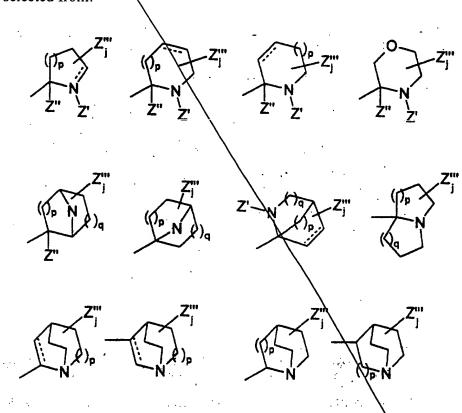
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For: PHARMACEUTICAL COMPOSITIONS AND METHODS FOR USE

that the sum of m plus n is 0, 1, 2 or 3; E, E^I, E^{II} and E^{III} individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, arvl, substituted arvl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:



where Z' represents hydrogen or lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; and Z'' is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond, p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

- 2. The compound of Claim 1 wherein X' is COR' where R' is selected from (Amended) the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic heterocyclylalkyl.
- The compound of Claim 2 wherein R' is phenyl or substituted phenyl. (Amended)

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16. (Amended) A compound of the formula:

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$$Cx \xrightarrow{A} X C \equiv C - \left(CEE^{i}\right)_{m} - \left(CE^{i}E^{ii}\right)_{n} - Q$$

where X" is nitrogen, X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R'', -CF₃, -CN, - NO_2 , $-C_2R'$, -SR', $-N_3$, O(=O)NR'R'', -NR'C(=O)R'', -C(=O)R', -C(=O)OR', -OC(=O)R', -C(=O)R', -C(=O)OR', -OC(=O)R', -OC(=O)R', -OC(=O)R', -OC(=O)R', -OC(=O)R'-O(CR\\R''),NR'R'' -O(CR'R''), NR''C(=O)R', -O(CR'R''), $NR''SO_2R'$, O(CR'R''), C(=O)R', OC(=O)NR'R", -NR'C(=O)O R", -SO₂R', -SO₂NR'R", and -NR'SO₂R", where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R' and R" can together form a cycloalkyl functionality; A is O, C=O or a covalent bond; D is a suitable non-hydrogen substituent species selected from the group of substituent species for X X' and X''; k is 0, 1 or 2; Cx is selected from a group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl. substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted nonaromatic heterocyclylalkyl; m is an integer and n is an integer such that the sum of m plus n is 0, 1, 2 or 3; E, E', E'' and E''' individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:

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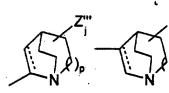
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where Z' represents hydrogen or lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; and Z'" is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cydoalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond; p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

The compound of Claim 16 wherein X' is COR' where R' is selected from 22. (Amended) the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic hetero-cyclylalkyl.

24. (Amended) The compound of claim 16 selected from the group consisting of (S)-5-(2pyrrolidin-2-ylethynyl)pyridine, (R)-5-(2-pyrrolidin-2-ylethynyl)pyridine, (S)-3-isopropoxy-5-(S)-3-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-phenyl-5-(pyrrolidin-2-ylethynyl)pyridine, phenoxyphenyl-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-(4-methoxyphenyl)-5-(pyrrolidin-2ylethynyl)pyridine, (S)-3-(4-hydroxyphenyl)-5-(pyrrolidin-2-ylethynyl)pyridine, cyclopentyloxy-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-cyclohexyloxy-5-(pyrrolidin-2ylethynyl)pyridine, (S)-3-(4-pyrrolidine-1-sulfonyl)phenoxy-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-pyridyloxy-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-pyrrolidin-2-ylethynyl)-5-(tetrahydropyran-4-yloxy)pyridine (S)-3-(3,5-dihydroxy)phenoxy-5-(pyrrolidin-2and ylethynyl)pyridine.

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25. (Amended) A pharmaceutical composition incorporating a compound of

 $X = CH = CH - (CEE^I)_m - (CE^IE^{II})_n - Q$

AH

where each of X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R", -CF₃, -CN, -NO₂, -C₂R', -SR', -N₃, C(=O)NR'R", -NR'C(=O)R", -C(=O)R', -C(=O)R', -OC(=O)R', -O(CR'R"), C(=O)R', -O(CR'R"), NR"C(=O)R', -O(CR'R"), NR"SO₂R', -OC(=O)NR'R", -NR'C(=O)OR", -SO₂R', -SO₂NR'R", and -NR'SO₂R", where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R' and R" can together form a cycloalkyl functionality; m is an integer and n is an integer such that the sum of m plus n is 0, 1, 2 or 3; E, E¹, E¹¹ and E¹¹¹ individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:

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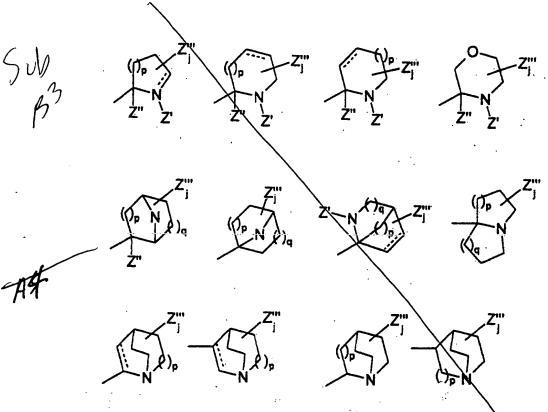
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where Z' represents hydrogen or lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; and Z'" is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond; p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

- The pharmaceutical composition of Claim 25 wherein X' is COR' where R' 26. (Amended) is selected from the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic non-aromatic heterocyclylalkyl and substituted non-aromatic heterocyclylalkyl.
- 27. The pharmaceutical composition of Claim 26 wherein R' is phenyl or (Amended) substituted phenyl.

(Amended)

A pharmaceutical composition incorporating a compound of the formula:

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$$Cx \xrightarrow{A} X C \equiv C - \left(CEE^{I}\right)_{m} - \left(CE^{I}E^{II}\right)_{n} - Q$$

where X" is nitrogen and X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R", -CF₃, -CN, -NO₂, \C₂R', -SR', -N₃, C(=0)NR'R", -NR'C(=0)R", -C(=0)R', -C(=0)OR', --O(CR'R''), C(=O)R', -O(CR'R"),NR'R" OC(=O)R'-O(CR'R'')NR''C(=O)R'O(CR'R''), $NR''SO_2R'$, -OC(=O)NR'R'', -NR'C(=O)OR'', $-SO_2R'$, $-SO_2NR'R''$, and $-NR'SO_2R''$, where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R' and R" can together form a cycloalkyl functionality; A is O, C=O or a covalent bond; D is a suitable non-hydrogen substituent species selected from the group of substituent species for X, X' and X"; k is 0, 1 or 2; Cx is selected from a group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclyl, substituted non-aromatic non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic hetero-cyclylalkyl; m is an integer and n is an integer such that the sum of m plus n is 0, \(\lambda\) 2 or 3; E, E¹, E¹¹ and E¹¹¹ individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:

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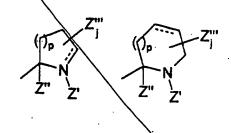
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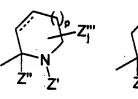
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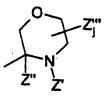
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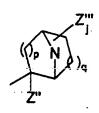
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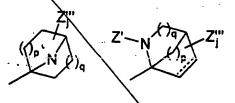
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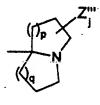


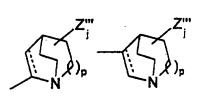


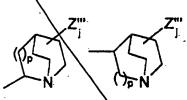












where Z' represents hydrogen or lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; arid Z" is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond; p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

- The pharmaceutical composition of Claim 41 wherein X' is COR' where R' 48. (Amended) is selected from the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic hetero-cyclylalkyl.
- (Amended) A method for treating a central nervous system disorder, said method 51. comprising administering an effective amount of a compound having the formula:

$$\begin{array}{c} X \\ \end{array} \begin{array}{c} CH = CH \\ \end{array} - \left(\begin{array}{c} CEE^I \end{array} \right)_m - \left(\begin{array}{c} CE^{II}E^{III} \end{array} \right)_n - Q \end{array}$$

where each of X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl,

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substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R", -CF₃, -CN, -NO₂, -C₂R', -SR', $-N_3$, C(=O)NR'R'', -NR'C(=O)R'', -C(=O)R', -C(=O)OR', -OC(=O)R', -O(CR'R''), -C(=O)R', $-O(CR'R'')NR'R'' -O(CR'R'')NR''C(=O)R', -O(CR'R'')NR''SO_2R', -OC(=O)NR'R'', -NR'C(=O)O$ R", -SO₂R', -SO₂NR'R", and -NR'SO₂R", where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R' and R" can together form a cycloalkyl functionality; m is an integer and n is an integer such that the sum of m plus n is 0, 1, 2 or 3; E, E^I, E^{II} and E^{III} individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:

$$Z_{j}^{n} = Z_{j}^{n} = Z_{j$$

where Z' is hydrogen, lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; and Z" is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond; p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

52. (Amended) The method of Claim 51 wherein X' is COR' where R' is selected from the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic

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heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic heterocyclylalkyl.

53. (Amended) The method of Claim 51 wherein R' is phenyl or substituted phenyl.

66. (Amended) A method for treating a central nervous system disorder, said method comprising of the administration of an effective amount of a compound having the formula:

$$C = C - (CEE^{i})_{m} - (CE^{i}E^{i})_{n} - Q$$

$$D_{k} X^{m}$$

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where X" is nitrogen, X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R", -CF₃, -CN, - NO_2 , $-C_2R'$, -SR', $-N_3$, C(=O)NR'R'', -NR'C(=O)R'', -C(=O)R', -C(=O)OR', -OC(=O)R', -OC(=O)R' $O(CR'R'')_{r}C(=O)R'$, $-O(CR'R'')_{r}NR''R''$ $-O(CR'R'')_{r}NR''C(=O)R'$, $-O(CR'R'')_{r}NR''SO_{2}R'$, OC(=O)NR'R", -NR'C(=O)O R", -SO₂R', -SO₂NR'R", and -NR'SO₂R", where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R and R" can together form a cycloalkyl functionality; A is O, C=O or a covalent bond; D is a suitable non-hydrogen substituent species selected from the group of substituent species for X, X' and X"; k is 0, 1 or 2; Cx is selected from a group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted nonaromatic hetero-cyclylalkyl; m is an integer and n is an integer such that the sum of m plus n is 0, 1, 2 or 3; E, E^I, E^{II} and E^{III} individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Ais selected from: